

## CLAIMS:

- 5 1. A crash sensor arrangement in a motor vehicle, the crash sensor arrangement including a first set of sensors comprising respective sensor on each side of the vehicle, each sensor being an accelerometer having a predetermined sensing axis, each sensor being mounted on the vehicle close to the outer skin of the vehicle and at a first longitudinal position such that the  
10 sensing axis of each sensor makes a predetermined angle to the longitudinal axis of the vehicle, the predetermined angle being between  $30^\circ$  and  $60^\circ$ , or between  $-30^\circ$  and  $-60^\circ$ , the sensing axes being mirror symmetrical to each other relative to the longitudinal axis of the vehicle, so that at the said first longitudinal position there are only said two respective sensors, the sensing  
15 axes of the two sensors extending in different directions.
2. An arrangement according to Claim 1 wherein the predetermined angle is between  $40^\circ$  and  $50^\circ$ , or  $-40^\circ$  and  $-50^\circ$ .
- 20 3. An arrangement according to Claim 1 wherein the predetermined angle is substantially  $45^\circ$ , or  $-45^\circ$ .
4. An arrangement according to any one of the preceding Claims wherein the sensing axes of the sensors are directed forwardly and outwardly of the  
25 vehicle.
5. An arrangement according to any one Claims 1 to 3 wherein the sensing axes are directed rearwardly and outwardly of the vehicle.

6. An arrangement according to any one of the preceding Claims wherein the sensors are mounted on the vehicle adjacent the "B" posts of the vehicle.
- 5 7. An arrangement according to any one of Claims 1 to 5 wherein the sensors are mounted on the vehicle adjacent the "C" posts of the vehicle.
8. An arrangement according to any one of the preceding Claims wherein the vehicle is additionally provided with a second set of sensors comprising two  
10 further crash sensors, mounted on respective sides of the vehicle at a second longitudinal position spaced from the first longitudinal position.
9. An arrangement according to Claim 8 wherein each further crash sensor of the second set of sensors is a contact sensor.
- 15
10. An arrangement according to Claim 8 wherein each further crash sensor of the second set of sensors is an accelerometer located close to the outer skin of the vehicle, the sensing axis of the sensors of the second set of sensors being mirror symmetrical to each other relative to the longitudinal axis, but also  
20 extending in directions which differ from the directions of the axis of the sensors of the first set of sensors.
11. An arrangement according to Claim 10 wherein the accelerometer of each sensor of the second set of sensors has a sensing axis which extends  
25 substantially perpendicularly to the longitudinal axis of the vehicle.
12. An arrangement according to any one Claims 8 to 11 wherein each sensor of the second set of sensors is mounted on the vehicle adjacent an "A" post of the vehicle.

13. An arrangement according to any one Claims 8 to 11 wherein each sensor of the second set of sensors is mounted in a door of the vehicle.

5 14. An arrangement according to any one of the preceding Claims wherein the vehicle is provided with at least one front sensor.

15. An arrangement according to any one of the preceding Claims wherein the vehicle is provided with two front sensors.

10

16. An arrangement according to Claims 14 or Claim 15 wherein the or each front sensor is a contact sensor.

15 17. An arrangement according to Claim 14 or Claim 15 wherein the or each front sensor is an accelerometer.

18. An arrangement according to Claim 17 wherein the sensing axis of each accelerometer forming a front sensor is substantially aligned with the longitudinal axis of the vehicle.

20

19. An arrangement according to Claim 17 wherein the sensing axis of each accelerometer forming a front sensor is between  $30^\circ$  and  $60^\circ$ , or between  $-30^\circ$  and  $-60^\circ$  relative to the longitudinal axis of the vehicle, the axis of the front sensors being mirror symmetric relative to the longitudinal axis.

25

20. An arrangement according to any one of the preceding Claims wherein a central control unit is provided to receive signals from the sensors and to control the deployment or actuation of one or more safety devices within the vehicle.

21. An arrangement according to any one of the preceding Claims wherein all of the sensors are located close to the outer skin of the vehicle.